

TO ALL TO WHOM THESE: PRESENTS SHAYLL COME;

Nickerson American Plant Breeders, Inc.

Colherens, there has been presented to the

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OF ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF Eighteen TEAR FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT

TY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT.

UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS

OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS
BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'Celtic'

In Esstimony Wathersot, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D. C. this 30th day of June in the year of our Lord one thousand nine hundred and eighty-eight.

Rilad E. Lyng

Attosk

Lenneth A. Coms

Plant Variety Protection Office Agricultural Marketing Service

FORM WA-470 (7-84) (Edition of 3-84 is obsolete,)

		<u> </u>	APPROVAL EXPIRES 4-30-85
U.S. DEPARTMEN AGRICULTURAL N	ARKETING SERV	VICE	FORM APPROVED: OMB NO. 0681-0055 Application is required in order to determine if a plant variety protection certificate is to
APPLICATION FOR PLANT VAR (Instruction	IETY PROTE	CTION CERTIFICATE	be issued (7 U.S.C. 2421). Information in held confidential until certificate is issued (7 U.S.C. 2428).
1. NAME OF APPLICANT(S)		2. TEMPORARY DESIGNATION	S. VARIETY NAME
Nickerson American Plant Bree	eders Inc.	HS81-55	Celtic
4. ADDRESS (Street and No. of R.F.D. No., City, St.	ate, and Zip Code)	S. PHONE (Include area code)	FOR OFFICIAL USE ONLY
5201 Johnson Drive, P.O. Box Mission, KS 66201	2955	913-384-4940 (KS) 303-532-3721 (CO)	8600C80
6. GENUS AND SPECIES NAME	7. FAMILY NA	ME (Botanical)	DATE
Triticum aestivum L.	Gramine	ae	March Lo, 1286_ TIME //:00 VA.M. P.M.
8. KIND NAME	9.	DATE OF DETERMINATION	AMOUNT FOR FILING
Hard Red Spring Wheat		1) Spring of 1981 2) Spring of 1984	S 1800, 00 DATE, MAYCH 10, 1986 AMOUNT FOR CERTIFICATE
10. IF THE APPLICANT NAMED IS NOT A "PERSO partnership, association, etc.)  Corporation	ON," GIVE FORM	OF ORGANIZATION (Corporation	\$ 20-0 00 DATE
			They 16 1988
11. IF INCORPORATED, GIVE STATE OF INCORP Delaware	ORATION		12. DATE OF INCORPORATION January 19,1983
Mission, KS 66201 (913) 384  14. CHECK APPROPRIATE BOX FOR EACH ATTA  a. Xi Exhibit A, Origin and Breeding History of  b. Xi Exhibit B, Novelty Statement.  c. Xi Exhibit C, Objective Description of Variety  d. Xi Exhibit D, Additional Description of Variety  e. Xi Exhibit E, Statement of the Basis of App  15. DOES THE APPLICANT(S) SPECIFY THAT SEE  SEED? (See Section 83(a) of the Plant Variety Pr	CHMENT SUBMIT f the Variety (See ety (Request form liety.  licant's Ownership DOF THIS VARI	Section 52 of the Plant Variety Pr  from Plant Variety Protection Off  Exhibit F.  ETY BE SOLD BY VARIETY NAM	Otection Act.)  Ouality Data E ONLY AS A CLASS OF CERTIFIED
16. DOES THE APPLICANTIS) SPECIFY THAT THE	S VARIETY BE		which classes of Production
LIMITED AS TO NUMBER OF GENERATIONS	•	BEYOND BREEDER SE	
X Yes	FOR PROTECTI	X Foundation	X Registered X Certified
			Yes (If "Yes," give date)
			X No
19. HAS THE VARIETY BEEN RELEASED, OFFE	RED FOR SALE,	OR MARKETED IN THE U.S. OF	OTHER COUNTRIES ?  Yes (If "Yes," give name of countries and dates)
			No
20. The applicant(s) declare(s) that a viable sam plenished upon request in accordance with s	ple of basic seed	s of this variety will be furnished	UX.
The undersigned applicant(s) is (are) the own distinct, uniform, and stable as required in S Variety Protection Act.	ner(s) of this sex	ually reproduced novel plant va	riety, and believe(s) that the variety is se provisions of Section 42 of the Plant
Applicant(s) is (are) informed that false repr	esentation herei	n can jeopardize protection and	result in penalties.
SIGNATUREOF APPLICANT			DATE 7-24-01
18ah 1 12			00/16
SIGNATURE OF APPLICANT	•		2-24-86 DATE 2-27-86

### EXHIBIT A

### ORIGIN AND BREEDING HISTORY OF CELTIC

Celtic originated from the cross 'Angus/Len' which was made at Berthoud, Colorado in 1978. F2 selections from this cross were advanced in the greenhouse through the F4 generation by single seed descent. The original bulk was from a single F5 head-row selection made at an AgriPro breeding nursery in Hunter, North Dakota. This bulk was entered into yield trials in 1981 under the experimental number HS81-55. This line has been tested in AgriPro nurseries of the Red River Valley from 1978 through 1985. It has been tested in the Uniform Regional Nursery in 1984 and 1985. It has also been tested in North and South Dakota and Minnesota state nurseries in 1985.

Two hundred heads were pulled from the F8 generation of the original bulk in the 1982 season. These were grown in head-rows for initial purification at Berthoud, Colorado in 1983. Of these, 6% were discarded due to height. In the 1984 season, the remaining bulked head-rows were grown to produce the breeder seed lot.

Celtic is uniform and pure. Less than .5% of the plants have been rogued from the breeder seed field in 1984. Of these rogued plants 95% were 3 to 5 centimeters taller than Celtic. Less than .5% of these taller plants may be expected in subsequent generations.

### EXHIBIT B

### NOVELTY STATEMENT

Celtic is most similar to the hard red spring wheat 'Len'. However, it can be distinguished by the following morphological characteristics:

- Celtic has a long glume length; Len has a medium glume length, (see statistical data page 1).
- Celtic and Len both have an acuminate beak type; however, they differ significantly in length, (see statistical data on page 2).

page 1

# A.N.O.V.A. TABLE FOR GLUME LENGTH CELTIC VS. LEN

Source	<u>df</u>		<u>55</u>	ms
Total Var Error	49 1 48	•	15.514 2.465 13.049	2.46491** 0.27185

F-Test = 9.067\*\* CV = 0.699

LSD(5%) = 0.059

### MEANS FOR EACH VARIETY

Len 1 Mean: 8.396 mm Celtic 2 Mean: 8.840 mm

\*\* The probability that the difference in means of glume length are significantly different at the 1% alpha level.

page 2

## A.N.O.V.A. TABLE FOR BEAK LENGTH

### CELTIC VS. LEN

<u>Source</u>	<u>df</u>	ss	ms
Total	49	246.481	
Var	1	92.753	92.75289**
Error	48	153.728	3.20267

F-Test = 28.961\*\* CV = 3.085 LSD(5%) = 0.202

### MEANS FOR EACH VARIETY

Len 1 Mean: 8.648 mm Celtic 2 Mean: 5.924 mm

\*\* The probability that difference in means of beak length are significantly different at the 1% alpha level.

INSTRUCTIONS: See Reverse.

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE LIVESTOCK, MEAT, GRAIN & SEED DIVISION BELTSVILLE, MARYLAND 2070B

EXHIBIT C

## OBJECTIVE DESCRIPTION OF VARIETY WHEAT (TRITICUM SPP.)

NAME OF APPLICANTS	FOR OFFICIAL USE ONLY
Nickerson American Plant Breeders Inc.	P VPO NUMBER
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)	8600080
5201 Johnson Drive, P.O. Box 2955 Mission, KS 66201	DESIGNATION
111331011, K3 00201	Čeltic
Place the appropriate number that describes the varietal character Place a zero in first box (e.s. 0 8 9 or 0 9 ) when number is	of this variety in the boxes below.
1. KIND:	ettler 79 or less or 9 or less.
1 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 =	POLISH 6 = POULARD 7 = CLUB
2. TYPE:	
1 1 = SPRING 2 = WINTER 3 = OTHER (Specify)	1 = SOFT 3 = OTHER (Specify) 2 = HARD
2 1 = WHITE 2 = RED 3 = OTHER (Specify)	<u> </u>
3. SEASON - NUMBER OF DAYS FROM 老城市我也有老的 TO:	
0 5 2 FIRST FLOWERING Planting	0 5 7 LAST FLOWERING
4. MATURITY (50% Flowering):	
0 1 no. of days Earlier than	7 1 = ARTHUR 2 = SCOUT 3 = CHRIS
NO. OF DAYS LATER THAN	4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Len
5. PLANT HEIGHT (From soil level to top of head): * equal to L	an
0 8 2 CM. HIGH	.cn
CM. TALLER THAN	
CM. SHORTER THAN	1 = ARTHUR 2 = SCOUT 3 = CHRIS  4 = LEMHI 5 = NUGAINES 6 = LEEDS 7 = Len
6. PLANT COLOR AT BOOTING (See reverse):	7. ANTHER COLOR:
3 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN	1 1 = YELLOW 2 = PURPLE
@ anthesis   8. STEM:	
2 Anthocyanin: 1 = ABSENT 2 = PRESENT -	2 Waxy bloom: 1 = ABSENT 2 = PRESENT
Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT	1 Internodes: 1 = HOLLOW 2 = SOLID
0 4 NO. OF NODES (Originating from node above ground)	CM. INTERNODE LENGTH BETWEEN FLAG LEAF
9. AURICLES:	
2 Anthocyanin: 1 = ABSENT 2 = PRESENT	2 Hairiness: 1 = ABSENT 2 = PRESENT
O. LEAF:	
1-2 Flag leaf at 1 = ERECT to 2 = RECURVED 3 = OTHER (Specify):	2 Flag leaf: 1 = NOT TWISTED 2 = TWISTED
Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT	2 Vary bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
1 3 MM. LEAF WIDTH (First leaf below flag leaf)	2 3 CM. LEAF LENGTH (First leaf below flag tem):

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY							
Plant tillering	Len	Seed size	Len							
Leaf size	Len	Seed shape	Len							
Leaf color	Len	Coleoptile elongation	Len							
Leaf carriage	Len	Seedling pigmentation	Len							

#### INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this family.

- (a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States. Technical Builetin 1278, United States Department of Agriculture.
- (b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook resed testing prepared by the Association of Official Seed Analysts. (See attachment.)
- LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

### EXHIBIT D

### ADDITIONAL DESCRIPTION OF CELTIC

Celtic is a hard red spring wheat developed by Nickerson American Plant Breeders Inc. It was tested as the experimental number HS81-55.

Celtic is a tall semidwarf height variety similar in height to Len. Celtic has very good straw strength, medium to early maturity and its milling and baking qualities are very good.

Juvenile growth habit is erect. Plant color at anthesis is blue-green. Flag leaf is twisted and erect to drooping. Head shape is tapering to strap, lax, awned and white at maturity. Glumes are long and wide at maturity with oblique shoulders and acuminate beaks. Seed shape is oval to ovate with rounded cheeks. Seed crease is narrow and shallow. Brush size is midlong and midsized.

Celtic is adapted to spring wheat region of the upper midwest.

### EXHIBIT E

### STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

Nickerson American Plant Breeders Inc. is the applicant for protection in this case being:

- a) The incorporated business (registered in Delaware) for and within which regular employees have bred the named variety.
- b) The proprietory owner and intending commercial user of the variety.

### EXHIBIT F.

### AGRONOMIC AND QUALITY DATA

### OVER YEAR SUMMARY OF AGRIPRO AND OTHER SELECTED VARIETIES\*

•	<u></u>	Yield -	- Bu/A		(10)	(10)	(4)	(11)
<u>Variety</u>	83(2)	84(4)	85(5)	3-Year <u>Ave.</u>	T. Wt. <u>lbs/bu</u>	Ht. <u>cm</u>	Lodg. <u>1-9</u>	Head. <u>Days</u>
Celtic	61.7	64.5	80.3	69.7	61.0	85.9	2.9	59.1
Wheaton	63.2	68.2	85.4	73.3	60.0	79.9	3.7	60.0
Norseman	59.5	68.4	87.1	72.9	59.5	77.8	2.0	61.0
Marshall	61.7	65.1	86.1	72.2	60.7	80.9	3.3	61.1
Stoa	66.0	65.4	77.7	70.3	60.8	98.2	3.6	59.0
Era	59.7	58.8	84.0	68.8	60.8	81.4	5.7	62.4
Len	57.9	63.7	77.5	67.2	60.5	84.9	2.3	60.0
Butte	52.1	57.9	69.9	60.7	61.2	92.4	4.8	56.8

 $<sup>\</sup>star$  ( ) indicates number of observations, all data from Red River Valley Nurseries.

NAPB and Cereal Rust Laboratory Disease Data, 1983-85

	<u>Tan Spot, 1-9</u> (3) (5) (4)				<u>Se</u> (2)	ptori (5)	ia, 1- (4)	· <u>9</u>	St. Paul, MN Rust Nursery Leaf Rust Stem Rust								
<u>Variety</u>	83	84	<u>85</u>	Avq.	83	84	85	Avq.	84 84	<u>85</u>	84	85					
Celtic Stoa Butte Len	3.4 6.2 7.3 7.3	5.1 6.2 6.0 6.0	5.0 5.6 6.1 6.1	4.6 6.0 6.3 6.4	5.1 6.7 7.9 7.7	5.0 5.8 6.6 7.4	5.0 5.4 5.8 5.8	5.0 5.8 6.5 6.8	5MS-S  10S	TS TMR 80S 40MS-S	TMR  5R 	0 TMR 10MF					
Wheaton Marshall Era	4.0 2.8 4.2	5.9 5.3 5.4	5.5 5.3 5.6	5.3 4.7 5.2	6.4 5.3 5.3	5.7 5.9 5.1	5.8 5.0 5.6	5.9 5.5 5.3	  10MS-S	TMS TMS TS	  TR	0					

<sup>\* ( ) -</sup> indicates number of observations, all data from Red River Valley nurseries.

AGRIPRO SEEDS

HARD RED SPRING WHEAT QUALITY

	TOTAL		1 #	7-B	H-8	<u>a</u> c	n !	m J	(A)	<u>1</u>	<u>ပု</u> ရ	n L		m 1	π	173-B			Œ Į	Α'n	Ų-	₩-1	<u>—</u>	an J	<u> </u>	H.	9 10 10 10 10 10 10 10 10 10 10 10 10 10	m -	<b>⊄</b>	Ħ.	130-A	!	
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